

CLAIM AMENDMENTS

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Claims 1 to 3 (canceled)

4. (currently amended) The process according to Claim ~~2~~ 23, ~~further comprising:~~
~~using wherein the control circuit to condition an audio signal as a function of~~ is responsive to a back
electromotive force of a driver of the sound transducer.

5. (currently amended) The process according to Claim ~~2~~ 23, ~~further comprising:~~
~~using wherein the control circuit to condition an audio signal as a function of~~ is responsive to an
impedance of a driver of the sound transducer.

6. (currently amended) The process according to Claim ~~2~~ 23, wherein the sound transducer
comprises a coil and a diaphragm, the process ~~further comprising:~~
~~using and the control circuit to condition an audio signal as a function of~~ is responsive to a back
electromotive force of the coil.

7. (currently amended) The process according to Claim ~~1~~ 23, wherein the sound transducer
comprises a coil, the process ~~further comprising:~~
~~using and the control circuit to condition an audio signal as a function of~~ is responsive to an
impedance of the coil.

8. (currently amended) The process according to Claim ~~1~~ 23, ~~further comprising:~~
~~using wherein the control circuit to condition an audio signal as a function of~~ is responsive to a
motor factor of a driver of the sound transducer.

9. (currently amended) The process according to Claim ~~1~~ 23, ~~further comprising:~~
~~using wherein sound transducer comprises a support and the control circuit to condition an audio~~
~~signal as a function of~~ a is responsive to spring stiffness of a spring the support of the sound
transducer.

10. (currently amended) The process according to Claim-1 23, wherein the sound transducer comprises a coil and a diaphragm, ~~the process further comprising:~~
using and the control circuit to ~~condition an audio signal as a function of~~ is responsive to a motor factor of the coil and diaphragm.

11. (currently amended) The process according to Claim-1 23, wherein the sound transducer comprises a diaphragm, ~~the process further comprising:~~
using and the control circuit to ~~condition an audio signal as a function of a~~ is responsive to spring stiffness of a ~~spring support of the coil and the diaphragm.~~

12. (currently amended) The process according to Claim-2 23, wherein the sound transducer comprises a ~~speaker transducer having a coil and diaphragm assembly.~~

Claims 13 to 22 (canceled)

23. (currently amended) A process for ~~controlling generating a signal to drive a sound transducer in~~ an audio reproduction system of a telephony device which includes a sound transducer, the process comprising:

~~preparing a model of the sound transducer portion of the audio reproduction system;~~

~~providing a control circuit having first and second inputs;~~

~~configuring the control circuit as a function of the model;~~

~~providing receiving an audio signal to the~~ at a first input of a control circuit, wherein the control circuit is configured according to a model of the sound transducer;

~~providing to the second input receiving a signal which is indicative of a state of the sound transducer~~ at a second input of the control circuit, wherein the state is a relative position of a movable portion of the sound transducer with respect to another portion of the sound transducer; and

~~utilizing the control circuit to generate an output signal which is a function of to drive the sound transducer, wherein the output signal is responsive to the signal indicative of a state of the sound transducer and the audio signal.~~

Claim 24 (canceled)

25. (currently amended) The process according to ~~Claim 24~~, wherein ~~providing to the second input a position indication signal~~ Claim 23 ~~that~~ comprises generating the position-indication ~~signal~~ signal indicative of state using an electrical characteristic of the system.

26. (currently amended) The process according to Claim 25, wherein the sound transducer ~~includes~~ comprises a coil and the electrical characteristic is an impedance of the coil.

27. (currently amended) The process according to Claim 25, wherein the sound transducer ~~includes~~ comprises a coil and the electrical characteristic is a capacitance of the coil with respect to a structure of the sound transducer.

28. (currently amended) The process according to ~~Claim 24~~ 23, wherein ~~providing to the second input a position indication signal~~ comprises generating the position indication signal ~~the~~ signal indicative of state is generated optically.

29. (currently amended) The process according to Claim 28, wherein ~~generating the position-indication signal optically~~ comprises using an infrared light source and directing the signal indicative of state is generated using light directed from the ~~an~~ infrared light source to a ~~the~~ movable portion of the sound transducer.

30. (currently amended) The process according to Claim 29, wherein ~~using an~~ the ~~infrared light source~~ comprises providing an activation signal to ~~is~~ an infrared light emitting diode.

Claim 31 (canceled)

32. (currently amended) The process according to ~~Claim 31~~ 23, wherein ~~providing to the second input a position indication signal~~ comprises providing to the second input a diaphragm position indication signal the movable portion of the sound transducer is a diaphragm.

33. (currently amended) The process according to Claim 32, ~~wherein providing a diaphragm position indication signal that~~ comprises generating the ~~diaphragm position indication signal~~ signal indicative of state using an electrical characteristic of the system.

34. (currently amended) The process according to Claim 33, wherein the sound transducer comprises a coil and the electrical characteristic is an impedance of a the coil.

35. (currently amended) The process according to Claim 33, wherein the sound transducer comprises a coil and the electrical characteristic is a capacitance of a the coil with respect to a structure of the ~~speaker sound~~ transducer.

36. (currently amended) The process according to Claim ~~31~~ 32, wherein ~~providing to the second input a position indication signal of the sound transducer~~ the process comprises generating the ~~position indication signal~~ signal indicative of state optically as ~~a function of a~~ in response to the relative position of the diaphragm.

37. (currently amended) The process according to Claim 36, wherein ~~generating the position indication signal optically comprises using an infrared light source and directing the signal indicative of state is generated using light directed from said an~~ infrared light source toward a portion of the diaphragm.

38. (currently amended) The process according to Claim 37, wherein ~~using an the~~ infrared light source comprises providing an activation signal to is an infrared light emitting diode.

39. (currently amended) The process according to Claim 23, wherein the sound transducer comprises ~~a speaker transducer having a coil and a diaphragm, and wherein preparing a model of the sound transducer portion of the audio reproduction system comprises determining the coil is the~~ movable portion of the sound transducer and the model comprises an operational parameter of the ~~speaker sound~~ transducer as a function of a the relative position of the coil with respect to ~~a another~~ portion of the ~~speaker sound~~ transducer.

40. (original) The process according to Claim 39, wherein the operational parameter is an impedance of the coil.

41. (currently amended) The process of Claim 39, wherein the operational parameter is a motor factor of a driver of the ~~speaker~~ sound transducer.

42. (currently amended) The process of Claim 39, wherein the ~~speaker~~ sound transducer includes a ~~spring~~ comprises a support coupled to the diaphragm, and wherein the operational parameter is a ~~spring~~ stiffness of the spring support.

Claims 43 to 46 (canceled)

47. (currently amended) The process according to Claim ~~45~~ 23, wherein ~~utilizing the control circuit to generate an output signal comprises compensation of the system with respect to a motor factor of the voice coil transducer~~ the audio reproduction system comprises a signal conditioning portion and a sound conditioning portion, and wherein the model comprises a representation of the sound conditioning portion of the audio reproduction system.

48. (currently amended) The process according to Claim 23, wherein the audio reproduction system comprises a signal conditioning portion and a sound conditioning portion, and wherein the further comprising preparing a model comprises a representation of a the signal conditioning portion of the audio reproduction system.

49. (currently amended) The process according to Claim 23, wherein utilizing the control circuit to generate an output signal comprises ~~compensation of the system with respect to~~ compensating for a back electromotive force of a driver of the sound transducer.

50. (currently amended) The process according to Claim 23, wherein utilizing the control circuit to generate an output signal comprises ~~compensation of the system with respect to~~ compensating for an impedance of a driver of the sound transducer.